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INSTRUCTIONS

FOR THE TREATMENT OF

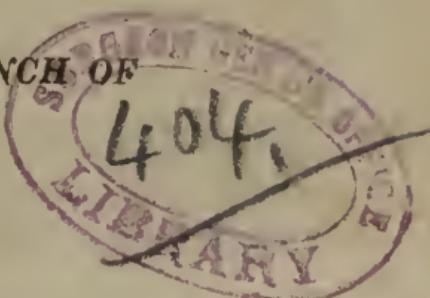
GUN SHOT WOUNDS,

ACCORDING TO

THE LATEST IMPROVEMENTS IN THAT

INTERESTING BRANCH OF

SURGERY.



PHILADELPHIA:

PRINTED BY JOHN BIOREN, NO. 88 CHESNUT STREET.

1814.

DISTRICT OF PENNSYLVANIA, TO WIT:

L. S.

BE IT REMEMBERED, That on the twenty-seventh day of September, in the thirty-ninth year of the Independence of the United States of America, A. D. 1814, John Bioren of the said district, hath deposited in this office, the title of a book, the right whereof he claims as proprietor in the words following, to wit:

“ Instructions for the treatment of Gun Shot Wounds, according to the latest improvements in that Interesting branch of Surgery.”

In conformity to the act of the Congress of the United States, intituled, “An act for the encouragement of Learning, by securing the copies of maps, charts and books, to the authors and proprietors of such copies, during the times therein mentioned.”—And also to the act, entitled, “An act supplementary to an act, entitled, “An act for the encouragement of learning, by securing the copies of maps, charts and books, to the authors and proprietors of such copies during the times therein mentioned,” and extending the benefits thereof to the arts of designing, engraving and etching historical and other prints.”

D. CALDWELL,
Clerk of the District of Pennsylvania.

The following improved method of treating Gun-shot wounds, extracted principally from a late publication entitled, “*The Edinburgh Practice of Physic and Surgery*,”—with some additional instructions, by one of the profession, formerly a surgeon in the army of the United States, are published for the information of those gentlemen, who at this eventful crisis, are engaged or about to engage in the service of their country, in the capacity of Regimental Surgeons or Surgeons’ Mates; and who have not had an opportunity of procuring that very excellent publication..

GUN-SHOT WOUNDS.

GUN-SHOT WOUNDS, whether from musket ball, cannon ball or fragments of shell, are to be considered as *contused* wounds, the inward surface of which is generally deadened by the ball or projected substance, and is afterwards separated by the process of suppuration and thrown off in the form of a slough. This circumstance prevents such wounds from healing by the first intention or by means of the adhesive inflam-

mation; in consequence of which the generality of such wounds must be allowed to suppurate.

Gun-shot wounds from the circumstance of commonly having a part killed, in general, do not inflame so speedily as those from other accidents; this tardiness to inflame is in proportion to the quantity that the deadened parts bear to the extent of the wound: from this circumstance the inflammation is later coming on when the ball passes through a fleshy part with great velocity, as the internal part of the wound is more completely deaded in proportion to such velocity.—On the other hand, when the ball has fractured a bone, which fracture of the bone has done considerable mischief to the soft parts, independent of the ball, there will be nearly as early inflammation as in a compound fracture of the same bone from any other accident; because the deadened part bears no proportion to the laceration, or wound in general.

Gun-shot wounds are attended with less bleeding than most others ; some, however, will be attended with more bleeding than others, even in the same part ; this arises from the manner in which the wound is produced. If an artery is cut directly across by a ball passing with great velocity, it will bleed freely ; if bruised and in some degree torn, it will bleed less.—When the velocity of the ball is great the direction of the wound will, in general, be more in a straight line, than when its velocity is less, for under such circumstance it more easily overcomes obstructions, and therefore passes on in its first direction.

When the ball passes with great velocity the parts are rendered less capable of healing than when it moves with a small velocity ; hence gun-shot wounds in thick parts, are in general, later healing at the orifice where the ball enters, than where it passes out, because, it becomes in some degree a spent ball ; the part having less slough, being only torn,

which will often admit of being healed by the first intention.

Till lately, it was the practice of almost every surgeon to widen by incision the orifices of wounds made by musket or pistol balls immediately upon their being received, or as soon after as possible, but as this practice has been found not only painful but frequently injurious, without any adequate benefit, it has been discontinued by the most experienced surgeons in Europe, excepting in such wounds as are attended with hæmorrhage from an artery which cannot be got at to have a ligature passed round it without such dilatation of the wound, and in certain cases accompanied with a compound fracture &c. ; when some extraneous substance is retained in the wound which can be extracted without much difficulty, and where the injury by delay would probably be greater than that arising from the dilatation. When the skull is fractured or any part of the viscera protrudes

hrough a wound, the wound must necessarily be dilated, with the smallest possible delay in order to apply the trepan or to remove the fragments of the bone by other means, and to replace the protruded viscera.

When the size of the wound will admit, the finger is the best probe to ascertain whether any and what kind of extraneous substances are retained in it; the retention of which unless near the orifice need give no concern, and the removal of which ought not to be attempted, because of the pain and inflammation such proceeding would produce, as we may rest assured it will come away with the slough or pus, in the course of the cure unless the ball has entered some cavity such as the cranium, thorax or abdomen.

If a ball or other foreign body happens to be lodged near the orifice of the wound, or can be perceived by the finger, to lie under the skin though at some distance from the orifice of the wound, it may be cut down to,

and extracted ; but when it is sunk deep, and out of the reach of the finger or a simple bougie, which in such cases should be used in place of a probe, it must appear evident upon the least reflection, that thrusting first, a long probe in quest of the bullet, and then as was formerly the practice a longer pair of forceps ; either with or without teeth, into a wound of that kind, must contuse, irritate and inflame the parts considerably, and consequently increase the mischief without any adequate benefit ;—and if they should at the same time lay hold of an artery, nerve or tendon with the ball, which may readily happen, the consequence would be shocking.

When the wounded person has not suffered any great loss of blood, and this is most frequently the case, it will be adviseable to open a vein immediately, (unless the patient has been previously in a state of considerable exhaustion and has an evident deficiency of blood,) and to take away from sixteen to

thirty ounces, and to repeat the bleeding at such intervals and in such quantity as the symptoms of inflammation, pain and fever may require. Repeated bleedings at the beginning are productive of many advantages; they prevent a great deal of pain, and inflammation, repress or lessen feverish symptoms, forward the digestion and sloughing of the wound, and seldom fail to prevent abscesses, and a long train of other distressing symptoms, which would retard the cure. Even when the feverish symptoms run high and there is almost a certainty that matter is forming, bleeding in that state is very frequently of great advantage.

If it so happen that a gun-shot wound has penetrated any of the large joints, and in passing through them, fractured the ends of the bones, it will be found for the most part impossible, let the skill or ability of the surgeon be ever so great, to preserve both the life and limb of the patient.—The reason of this is,

that the access of air to the cavity of the joint excites such a violent inflammation, as would certainly end in a gangrene: and, therefore for the most part, it will be proper, as soon as possible, to take off the limb. Indeed, in every case of compound fracture, whether produced by bullets or not, when the bones are much shivered, and the muscles and ligaments torn in such a manner, that no well founded hope of saving the limb can be entertained, it would be highly improper to persist in vain attempts for that purpose; for thus the patient's strength may be entirely exhausted by the great discharge of matter, or he may be destroyed by an hectic fever, raised by the absorption of the matter, so that even the amputation of the limb could not save his life. We are, however, far from advising any surgeon to amputate where there is a probability of saving a limb; nor is it any ordinary injury that can vindicate him for so doing. It is not enough that the bone be broken, and several of the fragments of it,

driven into the surrounding flesh, the muscles themselves being also penetrated and contused by the ball.—If none of the splinters reach the length of the joint, so that there is no danger of exposing the cavity of it to the air, if none of the large vessels be wounded, or otherwise injured, so that the circulation cannot go on, no amputation should ever be thought of in such cases;—Dr. Aitken's machine, so useful in compound fractures, will serve to support the limb properly, until the cure be accomplished. Nay, even when a ball has struck the head of a bone in such a manner as to fracture it completely, if the ball has passed fairly out through the other side, without injuring any of the large blood vessels, there is still no reason to amputate immediately. Here we ought carefully to remove the loose pieces of bone; and, if there be any considerable hæmorrhage from the small arteries round the joint, it ought to be stopped, by applying some kind of styptic*

* The most proper for this purpose will be a watery solution of opium with an equal quantity of extractum satureni.

to the mouths of the bleeding vessels, afterwards filling up the wound with dry charpie or short lint, placing the limb in the most convenient posture, and laying the patient as easy as possible. Several folds of long or patent lint ought then to be put over the charpie, of such size as exactly to fit the cavity of the wound, laying over the whole a large compress of linen, and retaining the dressings with a proper bandage. If the patient has not lost much blood, and be of a plethoric habit, we must have recourse to bleeding freely at the arm ; the wound must be covered lightly ; and, if there be any considerable oozing of blood from the veins, it is proper to expose the wound entirely to the air, but without completely taking off the bandage and dressings.

In cases of hæmorrhage, we are not to employ any poultice, as the flux of blood would be increased by the heat of it ; but as the blood in general stops about the fourth or

fifth day, and suppuration is then about to take place; we should lay on a large cold poultice over the dressings, if they be found to adhere to the edge of the wound. After the dressings are completely thrown off, we must gently cleanse the wound, with a soft moist sponge, and afterwards dress with fine charpie, moistened with oil, and the whole may be covered with a large thick compress, and kept in its place with a proper bandage.

P. S. During the revolutionary war, no important operation was performed on the field, especially such cases as required amputation or trepanning, but the wounded were conveyed on litters as soon as practicable to the nearest general hospital.

Hæmorrages from the arteries of the limbs were however immediately restrained by means of a simple tourniquet, made of common girthing with a pad and short

wooden handle, instead of a screw, to twist it round till it became sufficiently tight to suspend the circulation, till the surgeon had leisure to take up the wounded arteries or to send the patient to the general hospital.

When, however, any of the viscera, as the stomach, intestines, or lungs, &c. are protruded through a wound, they should be immediately restored to their natural situation, for which purpose the wound should be sufficiently dilated, if they cannot be reduced otherwise.—In cases where a limb is so much torn, that it hangs by a slender connection only, it may be immediately separated, the hæmorrhage restrained, and the wound dressed in the usual manner, as well as large substances sticking in the flesh or bones that are evident to the sight or touch should be extracted; and in many instances, the reduction of dislocations and fractures, especially of the upper extremities, should be attended to before the patient is removed

from the field of battle, by the regimental or field surgeons.—

To render the services of the regimental surgeons and mates most effectual, they should be placed, before the commencement of the action, at a safe distance in the rear of the regiment.

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